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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,446	08/30/2006	Yasuharu Onishi	NEC 04P302	5323

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HAYES SOLOWAY P.C.
3450 E. SUNRISE DRIVE, SUITE 140
TUCSON, AZ 85718

EXAMINER	
ELBIN, JESSE A	
ART UNIT	PAPER NUMBER
2614	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,446	ONISHI ET AL.	
	Examiner	Art Unit	
	JESSE A. ELBIN	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *4-6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 7-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed February 9, 2009 has been entered.

Election/Restrictions

2. Applicant's election without traverse of Species III in the reply filed on 7 November 2008 is acknowledged.

3. Claims 4-6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse.

Claim Objections

4. Claim 9 is objected to because of the following informalities: line 2 uses the word "consistency" wherein "consisting" is appropriate. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 8, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams (US Patent 2,284,462 ('462)) (already of record).

Regarding claim 1, Williams teaches a piezoelectric acoustic element ('461 col. 1 lines 14-15) using a piezoelectric element (Fig. 8 #2) as a vibration source, comprising: a hollow casing (housing; Fig. 8 #1) having at least one opening (Fig. 8 *top*); a piezoelectric element (Fig. 8 #2) that is disposed in said casing, and attached at one end of said piezoelectric element in a longitudinal direction (*at* Fig. 8 #3) to a side wall of said casing (Fig. 8 #1b) by a support member (Fig. 8 #3 *via* #1a) for pivotal movement with respect to said support member (#3) about an axis through said support member (*wherein said "axis" is interpreted as being 'vertically' through the support member #3*), and that bends about said axis (*wherein the intersection point of the support member and the piezoelectric unit (i.e. along the vertical axis) acts as a 'pivot' point about which the piezo member bends*) when a voltage is applied thereto ("piezoelectric bimorph unit 2" col. 2 line 15 *inherently bends when a voltage is applied thereto*); and a diaphragm (Fig. 8 #7) provided at the opening of said casing (Fig. 8 *illustrates #7 covering the opening at the top*); wherein said piezoelectric element (#2) and said diaphragm (#7) are joined through a vibration transmitting member (ring; Fig. 8 #6).

Regarding claim 8, Williams remains as applied above.

Williams further teaches said vibration transmitting member (Fig. 8 #6) is a spring ("ring 6 [is made] of yielding vibration conductive material such as viscoloid or rubber"; col. 3 lines 8-10).

Regarding claim 10, Williams remains as applied above.

Williams further teaches "provid[ing] an improved construction for piezoelectric acoustic devices (an acoustic device provided with the piezoelectric acoustic element according to claim 1; col. 1 lines 13-15).

Regarding claim 12, Williams remains as applied above.

Williams further teaches said vibration transmitting member (Fig. 8 #6) is elastic ("a ring 6 of yielding vibration conductive material such as viscoloid or rubber"; '462 page 2, left, lines 8-10).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US Patent 2,284,462 ('462)) (already of record) in view of Christensen (US Patent 5,062,139 ('139)) (already of record).

Regarding claim 2, Williams remains as applied above.

Williams does not explicitly teach that both ends of said piezoelectric element in a longitudinal direction are fixed to an inner surface of a respective side wall of said casing through a respective support member.

In the same field of endeavor, Christensen teaches a piezoelectric element (Fig. 3B #36) in a longitudinal direction being fixed to an inner surface of a respective side wall of said casing (e.g. Fig. 3B #16) through a respective support member (Fig. 3B #32) for the benefit of further reducing the overall size of the device, by moving the support members out from behind the piezo element.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the piezoelectric support member taught by Williams with the support member taught by Christensen to connect the piezoelectric element taught by Williams directly to the sidewall, further reducing the 'height' of the device taught by Williams.

Regarding claim 3, Williams and Christensen remain as applied above.

Williams further teaches said support member being elastic ("small blocks 3, 3 of soft material such as viscoloid or rubber"; col. 2 lines 18-19).

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US Patent 2,284,462 ('462)) (already of record) in view of Sawyer (US Patent Re 20,213 ('213)) (already of record).

Regarding claim 7, Williams remains as applied above.

Williams further teaches a "piezoelectric bimorph unit 2…such as is disclosed in United States Letters Patent Reissue 20,213" (col. 2 lines 15-17).

In the same field of endeavor, Sawyer teaches a piezoelectric element having a laminated structure (e.g. Fig. 4) in which conductive layers (electrodes; e.g. Fig. 4 325-26) and piezoelectric material layers (crystal portions; e.g. Fig. 4 #17-18) are alternately laminated (e.g. Fig. 4) for the benefit of increasing the flexure of the piezoelectric element.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a multi-layer piezoelectric element as taught by Sawyer in the acoustic device taught by Williams for the benefit of increasing the flexure of the piezoelectric element.

11. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US Patent 2,284,462 ('462)) (already of record).

Regarding claim 9, Williams remains as applied above.

Williams does not explicitly teach said diaphragm being formed of a film selected from the group [consisting] of a polyethylene terephthalate film, a polyethersulfone film, a polyester film, and a polypropylene film.

Williams does teach the diaphragm being made "of suitable material such as Celluloid, aluminum, Bakelite, or mica" (col. 3 lines 10-12) wherein 'Bakelite' and 'Celluloid' are obsolete moldable resin materials, which were seldomly used at the time of the invention. Aluminum and mica diaphragms are still used for their weather resistance and specific acoustic properties. As Williams does not limit the diaphragm to an exhaustive list of materials, and states that the diaphragm can be made "of suitable material"; one of ordinary skill in the art at the time of the invention would know to use a more modern "suitable material" as the diaphragm taught by Williams.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the material used by Williams as the diaphragm to use a more modern thermoplastic resin material with the specific acoustic properties required by the design specifications.

Regarding claim 11, Williams remains as applied above.

While Williams does not explicitly teach 'a portable terminal device provided with the piezoelectric acoustic element according to claim 1', Williams does teach "provid[ing] an improved construction for piezoelectric acoustic devices of small size

(col. 1 lines 13-15). Williams's further teaching of using the device "on receivers of small size" (col. 1 line 6) suggests to one of ordinary skill in the art that the device would be portable.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the device taught by Williams in a portable device based on Williams's teaching of using the device in "acoustic devices of small size".

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1-3 and 7-12 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 5,856,956 in view of the prior art of record. While the claim language of the instant application differs from that of the patent, the differences were not found to patentably distinguish the two. See the art rejections above concerning the obviousness of any limitations not claimed in the conflicting patent.

Response to Arguments

13. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSE A. ELBIN whose telephone number is (571)270-3710. The examiner can normally be reached on Monday through Friday, 9:00am to 6:00pm EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. E./
Examiner, Art Unit 2614
/CURTIS KUNTZ/
Supervisory Patent Examiner, Art Unit 2614